which it is parasitic will be well known to microscopists as a group of flagellate Infusoria, at one time found as freely-swimming forms, and at another passing into a resting stage. It is at this period of their existence that the Polyphagus attacks them. The minute spores are furnished with four or more delicate filaments, which project from the body of the spores like rays. One or more of these soon comes into contact with a Euglena, bores through its integument, and penetrates into its protoplasmic contents; it now becomes a haustorium, increases in size, often sends off other filaments, which go on the search for other specimens of Euglenæ; in the meanwhile the body of the spore grows apace, and, if its haustoria be only fairly successful in catching Euglenæ, soon increases to considerable (microscopical) dimensions, and in course develops into a pro-sporangium. Next a little bladder-like projection is seen slowly forcing its way out from this latter, and at last becomes developed into a zoosporangium, from which in time issue the cloud of zoospores, and so after a well-known fashion the vegetative development of this parasite is carried on. The presence of a true reproduction is, however, the great fact in the memoir. Among the individuals of Polyphagus developing in the interspaces of the dead Euglenæ will be found *two* forms; one larger than the other, and generally spherical in shape, is the female plant; the other, small and more or less club-shaped, is the male plant. From the former there is a tube-like prolongation which passes into a haustorium; from the latter there are several haustoria; these remain thread-like if they encounter no Euglenæ, or enlarge when they do. These two unicellular plants then conjugate, but after a somewhat strange and novel manner. The protoplasmic contents of the female plant project through an opening in the cell wall, forming slowly an oval mass (gonosphere), with the which a haustorium from a neighbouring male plant, coming into contact, there is a co-mingling of the contents of the two plants, and thereby a zygospore is produced; sometimes these have a quite smooth covering, at other times they are rough, with minute prickles. After a little rest the zygospore develops a zoosporangium, from which issue swarm-spores, and the cycle is complete. As the result of these investigations, the author would place the Chytridia forms in the group of the Siphomycetes. It will be observed that though the whole contents of two cells go to form the zygospore, yet that the difference in the size of these cells is very marked, and that the behaviour of the gynœciel cell reminds one of what takes place in an oospore. (Cohn's *Beiträge zur Biol. der Pflanzen*, Bd. ii. Heft 2, 1876.)

CRYPTOGAMIC FLORA OF RUSSIA.—We notice the appearance of the first fasciculus of an important Russian work, by M. Sredinsky, being a Catalogue of Russian Cryptogams. The work will be divided into five parts: Vascular Cryptogams, Musci, Lichens, Fungi, Characeæ, and Algæ, each part to appear in several separate fascicules. The first fasciculus is a description of the Vascular Cryptogams of Southern Russia, Transcaucasia, and the neighbourhood of St. Petersburg. Much valuable material, collected by Russian botanists, is already in the hands of the author, and many members of the St. Petersburg Society of Naturalists have promised to supply him with much additional material for his valuable work.

ALGÆ OF THE GULF OF FINLAND.—At the last meeting, February 28, of the St. Petersburg Society of Naturalists, M. Gobi made an interesting communication on the Algæ of the Gulf of Finland. They are not numerous and have migrated from the Atlantic Ocean. Towards the east the red Algæ become rare, and all diminish in number and size. It must be observed also that the red Algæ of the Gulf of Finland have almost nothing in common with those of the White Sea, which circumstance is an argument against the existence of a former communication between the Baltic and the White Sea advocated by some geologists, but more and more discountenanced by the latest explorations. Describing in detail the most important forms of red Algæ of the Gulf of Finland, M. Gobi exhibited a complete collection of them, together with a series of drawings and of microscopical plates from the same.

BOTANICAL GEOGRAPHY OF RUSSIA.—The seventh volume of the *Memoirs* of the St. Petersburg Society of Naturalists contains a most valuable contribution to the botanical geography of Russia, by M. Gobi, "On the Influence of the Valdai-plateau on the Geographical Distribution of Plants, with a Sketch of the Flora of the Western Part of Novgorod Government." The author begins with a detailed description of the orography of the region, of its geological structure, its soil and subsoil, its marshes, lakes, &c., and deals at length with the climate of the country. Further, after a review of former botanical works dealing with the same region, he gives a list of plants growing on the plateau (615 Phanerogams). The fourth chapter is devoted to a delineation of the main topographico-botanical subdivisions of the flora; and the fifth is a detailed discussion of the relations existing between the flora of the plateau and those of neighbouring tracts. After some general remarks the author traces here the boundaries of the regions occupied by about fifty plants, which boundary-lines run either across the plateau or along its slopes. The intrusion of these plants from the north, north-east, and south is graphically shown on three maps accompanying the paper.

NOTES

WE understand that the Council of the new University College, Bristol, intend shortly to appoint a Principal of the College. We presume that the claims of science will be well considered in the appointment, as the movement to which the college owes its origin took its rise in the desire to found a school of science for the West of England and South Wales. In the interests of the higher scientific and literary education, we hope that the Council may be successful in securing the services of an eminent man for so important a post.

AT the monthly meeting of the Council of the University College of Wales, one of the governors present expressed his intention to give 200*l*. a year for three years, to be applied in such form as the Council may deem best in connection with the college for the encouragement of scientific agriculture.

THE President and Fellows of the Chemical Society dined together at Willis's Rooms on Tuesday evening, the company numbering about 200, and including some of the most distinguished names in science. Prof. Huxley, in responding to the toast of the Learned Societies, pointed out that most of the younger London scientific societies are offshoots, or "buds," of the Royal Society; the latter, he maintained, now more than at any other time, needed sympathy and support. Prof. Huxley alluded with some humour to the extraordinary claims put in by some applicants for a share of the government grant, one gentleman alone having asked for 3,000*l*. out of the 4,000*l*. Some of the applicants reminded him of the Irishman who requested government to give him an appointment in any capacity in Church, Army, Navy, or Civil Service, his sole qualifications, the applicant confessed, being an inexhaustible fund of animal spirits and a keen sense of humour.

AN influential meeting was held at the Mansion House on Tuesday in support of the erection of an Imperial Museum for India and the Colonies, to which scheme we have already referred in detail. The proposal met with the warm approval of the meeting, and it was resolved that steps should be taken to move in the matter, and have a building erected on the Thames Embankment, on the site of the now demolished Fife House.

THE *Morning Post* of March 15 contains an article on the present state of the Loan Collection of Scientific Apparatus, and enumerates a number of collections that after the removal of foreign loans still remain to form the nucleus of a permanent museum. It points out that though the galleries have had to be closed in consequence of packing, the lectures have kept up the continuity of the scheme, and the apparatus forming the subject of the lectures have been brought into the lecture theatre as wanted. It adds, "There seems a fair probability that the nucleus of the permanent collection can be thrown open early in May."

THE obstacles hitherto presented to the medical education of women in England appear suddenly to have collapsed. The enabling Act of last session, introduced by the Right Hon. Russell Gurney, which permitted any licensing body to examine women for its diplomas, was first of all accepted by the Queen's University for Ireland and the Royal College of Physicians for Dublin. The example of these bodies has been speedily followed by the University of London. At a recent meeting the Senate reversed its decision of two years ago, and decided, by a majority of fourteen to eight, to admit women to its medical degrees. Among the majority are found the names of two of the most eminent medical men in London, who supported the motion on the ground that it was the duty of the University to give effect to the resolution arrived at by the Medical Council and by Parliament, that women should not be debarred from entering the profession. Since the matriculation examination is the sole avenue to all degrees in the University, this examination is now thrown open to women who present themselves with the intention of following it up by a course of medical studies. All these concessions to the friends of the medical education of women were, however, but barren victories as long as the hospitals closed their doors against the admission of female students to clinical instruction. Every hospital in London to which a medical school is already attached has refused this permission; and one chance only remained. The Royal Free Hospital in Gray's Inn Road is a general hospital containing the maximum number of beds required by any licensing body, and free from the difficulty of having already attached to it a school of male students. At the instance of the London School of Medicine for Women, the subject was last week brought before the Governing Body of this hospital, and a resolution was unanimously passed that, since they were the only body in London in a position to grant this privilege, it was their duty to throw open their hospital to female students. This decision, due mainly to the untiring exertions of the Treasurer to the London School of Medicine for Women in Henrietta Street, Brunswick Square, the Right Hon. J. Stansfeld, M.P., has only come just in time to prevent the breaking up of that institution. The executive committee of that school, at which regular courses of lectures in the whole curriculum of medical study have now been given for three years, had determined that, unless they could, before the close of this winter session, announced to the students that there was a prospect of solving the hospital difficulty in London, they must close the school in the summer, and recommend the students to go abroad for their clinical studies. The winter session closes next week, and it was only last Saturday that the announcement was made, in consequence of the decision of the Governing Body of the Royal Free Hospital, arrived at the preceding Wednesday. For the purpose of making the necessary arrangements, the Medical School for Women has entered into heavy engagements of a pecuniary nature, to enable them to fulfil which they will require the liberal support of the friends of the movement. With regard to the University of London, it is felt that the present position of admitting women to its medical degrees only, and to no others, is not one that can be permanently sustained; but any further extension of its privileges can only be effected by a new charter, or by an enabling Act similar to that of last session, applicable to all degrees.

PROF. GARROD completed on Tuesday his course of lectures at the Royal Institution on "The Human Form, its Structure in Relation to its Contour." Although some of the lectures have consisted of anatomical details, illustrated with diagrams prepared for a medical school, the attendances have been large in comparison with those of other Royal Institution courses, and ladies have formed more than a half of the audiences. Prof. Garrod's object was to describe the parts of the structure of the body which affect the contour in such natural attitudes as are commonly portrayed in works of art. Several ingenious working models to illustrate the action of different parts of the body were devised especially for these lectures, and a colossal wooden model of a disarticulated human skeleton was also specially prepared.

M. WADDINGTON has appointed M. Maindron a Chevalier of the Legion of Honour for services rendered to science in the capacity of secretary of the French Transit of Venus Commission. A new volume will be issued very shortly by the French Academy.

TUNGSTATE of soda has been much talked about lately as valuable, when mixed with ordinary starch, for rendering muslin dresses uninflammable. Prof. Gladstone and Dr. Alder Wright have both brought it before audiences at the Royal Institution, Dr. Wright showing its efficacy by having a muslin dress so prepared for one of his assistants to wear, in which he walked about over flames. In repeating the demonstration in the course of a lecture at South Kensington, on Saturday evening, it was fortunate that Dr. Wright had the dress placed on a dummy instead of being worn by an assistant, for no sooner was a light applied to it than it blazed up and was consumed. Why this happened could not be explained, as it is believed no mistake had been made in the preparation. No doubt the exact conditions under which the tungstate is reliable will be a subject for further investigation.

M. REDIER, barometer maker to the French Association for the Advancement of Science, has devised a barometer for warning miners when the atmospheric pressure is undergoing a sudden depression so that they may be on their guard against fire-damp explosion.

RURAL meteorology is progressing rapidly in France. No fewer than 500 parishes receive by telegraph daily warnings from the observatory. The telegrams summarising the readings taken at seven or eight o'clock in the morning (local time) from Constantinople to Valentia, arrive daily at two o'clock in each parish in connection with the observatory. The number of parishes is being daily increased.

EVERYONE knows that the aneroid barometer is composed of a metallic box exhausted of air and kept in a state of tension by an interior spring. A French optician has conceived the idea of substituting for the spring a weight attached to the exterior by a hook underneath.

IN a forcible article in the *Cape Argus*, for January 23, it is shown how much service could be done to farmers and others by giving them timely warning of approaching unfavourable weather. Such warning can only be based on extensive and carefully collected data, involving work which cannot be done for nothing. The *Argus*, therefore, reasonably urges that it is the duty of the Cape Parliament to provide the means of carrying on work that would undoubtedly benefit the whole colony.

SEVEN warnings have been sent to Europe by the Meteorological Office established by the *New York Herald*, since the end of February. Six of the predicted storms were felt in Paris, having crossed the Atlantic with a velocity somewhat less than had been anticipated.

A BRIGHT violet meteor was observed at St. Etienne on March 11 at two o'clock in the morning, in the southern part of the horizon. It was travelling with great velocity from west to east. No detonation was heard.

It is stated that on the 5th instant a rather severe earthquake was felt in the districts of Hällsback, Lerbäck, Bodarne, and Sköllersha, in the county of Nerike, Sweden, a distance of about ten English miles. The shocks were strong enough to shake the houses and make china and even heavier objects tumble down. The earthquake was also felt in the Province of Oster-götland. It is stated also that the island of Mull has been visited by an earthquake, which, although it lasted only a minute, caused much commotion in the island.

The Sedgwick Prize Essays must be sent in to the Registrary on or before October 1, *1879*, not as stated in last week's Nature (p. 439) on or before October 1, *1880*. The award is to be made in the Lent Term, 1880.

At the meeting of the Swedish Academy on February 14, Prof. Nordenskjöld read a paper by Dr. Kjelman, on "The Algæ of the Kara Sea," from which it appears that the sea, contrary to current opinion, is full of algæ, which sometimes attain gigantic sizes. The professor exhibited also photographic views of glaciers of the interior of Greenland, taken in 1870, by M. Berggion. They are true representations of views of the glacial period now prevailing in Greenland.

The *Stockholm Dagladet* states that recently Prof. Nordenskjöld and the companions of his last travel, Messrs. Kjelman Lundström, Tribom, Stucksberg, and Théel, as well as Mr Oscar Dickson, were entertained by the King of Sweden at dinner, where the question as to Prof. Nordenskjöld's expedition in 1878 was discussed. The king promised to place at Prof. Nordenskjöld's disposal the steamer *Sophia* on the same terms as in 1868, and the pecuniary means for the expedition are promised by Mr. Dickson. The expedition proposes to explore the Arctic Ocean east of the Yenissei as far as Behring's Strait. Some Russian naturalists have applied to Prof. Nordenskjöld to be permitted to take part in the explorations.

Prof. Ahlquist and students Böhm and Bergroth started on February 24 from Helsingfors on their ethnographical journey to the mouth of the Obi (Nature, vol. xv., p. 207).

At the last meeting of the St. Petersburg Society of Naturalists the programme of a botanical excursion to the Fergana province and the Pamir plateau, to be undertaken this year by M. Smirnof, was discussed and agreed to.

We regret to notice the death of Admiral Sir Edward Belcher' whose name is so well known in connection with the Arctic exploration of about a generation ago. Sir Edward was in his seventy-ninth year, and began his naval career sixty-six years ago. He did a great amount of surveying work in various parts of the world. He had almost retired from active work when, in 1852, he was sent out in command of one of the expeditions in search of Sir John Franklin. Although the search was unsuccessful, and the vessel had to be abandoned in 1854, the work then done by Sir Edward Belcher was sufficient to win for him a worthy place among Arctic heroes.

We notice in the seventh volume of the *Memoirs* of the St. Petersburg Society of Naturalists a paper, by M. Alénitzin, on the existence, in the Aralo-Caspian region, of a rise of land in a direction from south-east to north-west, and on the causes of the change of bed of the Amu-darya. Combining some observations relative to the structure of the shores of lakes Aral and Balkhash, the author proves that the south-eastern shores of both lakes have, during the recent geological period, been rising; and he explains by this circumstance the rapid undermining by the Amu of its right bank, at the point where the river turned in former times sharply to the west. This undermining, assisted by a relative rising of the upper parts of the river, resulted in an excavation of a bed directed to the north. Whatever may be thought of his theories the reader will find in M. Alénitzin's paper interesting information on the structure of the shores of both Central Asian interior seas.

The same volume contains an interesting note, by Prof. Féofilaktoff, on the diluvial deposits in Kieff and Poltava governments, containing the general results arrived at by the author during his many years' explorations, the details of which will be found in the *Memoirs* of the Kharkof Society of Naturalists for 1874.

The latest news received by the St. Petersburg Geographical Society from M. Potanin, announces that the expedition was stopped at Khobdo by the arrival of winter. The proposed further route of the expedition is across the great ridge which runs between the Altai and the Khangai, but the masses of snow which usually accumulated in the mountain-passes south of the Djabgan River made any further advance during winter impossible. Staying at Khobdo the expedition will make many important ethnographical observations, and collect information as to the trade of this place. As to Col. Prjevalsky, no news has been received from him, and probably will not for a long time. In November he was at Korleh, on his way to Lob-nor, entering thus on a country which has no communication with Russia. News may be expected only when he returns to Kuldsha, before undertaking his journey to Thibet.

The secretary of the St. Petersburg Geographical Society announces the return to the capital of M. Wojeikoff from his meteorological journey round the world. The countries he visited last were India, Java, and Japan. The visit to Japan was especially interesting, as M. Wojeikoff made an excursion into a part of the interior never visited before by Europeans, and collected very valuable information as to the Ainos tribe. The observations made during the journey will be the subject of communications to the Geographical Society.

At a sectional meeting of the Chester Society of Natural Science held last month Mr. J. D. Siddall read a paper on Foraminifera and other Microzoa in neighbouring limestone rocks, during the course of which he announced his discovery of Radiolarians, first, in the Halkin, and afterwards in the Minera limestones. Mr. Siddall had prepared several polished blocks to illustrate his lecture. Two of these showed specimens of beautifully preserved Radiolarians. Other members of this flourishing society have since obtained similar results by following his method of preparing these interesting microscopic objects. In some of the best pieces most of the types to be seen in thin slices of Barbadoes earth are represented, and in as great abundance. This discovery furnishes a capital example of the rewards which sooner or later follow patient scientific investigations. By this discovery Mr. Siddall has thrown back our knowledge of the distribution of Radiolarians in time from Mesozoic, if no from Tertiary, to Palæozoic formations.

The additions to the Zoological Society's Gardens during the past week include two Orang-outangs (*Simia satyrus*) from Borneo, presented by Dr. R. Sim, F.Z.S.; a Green Monkey (*Cercopithecus callitrichus*) from West Africa, presented by Mr. J. Mason Allen; a Grivet Monkey (*Cercopithecus griseo-viridis*) from North-east Africa, presented by Mr. J. Walter Richardson; a Cape Hyrax (*Hyrax capensis*) from South Africa, a Chinese Blue Magpie (*Urocissa sinensis*) from China, a Red-capped Parrot (*Pionopsitta pileata*) from Brazil, three Red-eared Conures (*Conurus cruentatus*) from South America, a Sarus Crane (*Grus antigone*) from North India, an Arabian Baboon (*Cynocephalus hamadryas*) from Arabia, purchased; an American Jabiru (*Mycteria americana*) from South America, deposited; a Common Badger (*Meles taxus*), born in the Gardens.